

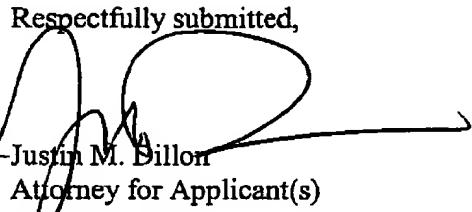
REMARKS

Applicants respectfully submit that the requested amendments add no new matter.

CONCLUSION

In view of the amendments and remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the Examiner is invited to telephone the undersigned.

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Respectfully submitted,

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Version with Markings to Show Changes MadeIn the Claims

The claims have been amended follows.

1. (Amended One Time) A method for restoring a virtual path in an optical network, the method comprising:

[broadcasting a plurality of resource request packets to a plurality of nodes in said optical network;]
detecting a port failure of a first port within a link between a first node and a second node of said virtual path;
in response to a determination that at least one alternate port is available within said link, restoring said virtual path to a second port of said at least one alternate port using said first node, wherein said restoring said virtual path to said second port comprises,
transferring a restoration message packet between said first node and said second node; and
identifying said second port within said link in response to said transferring [plurality of nodes with resources wherein said nodes with resources are ones of said nodes having a resource necessary to support said virtual path;
determining an alternate physical path, said alternate physical path comprising ones of said nodes with resources;
configuring said alternate physical path by establishing a communication connection between said ones of said nodes with resources; and
restoring said virtual path by provisioning said virtual path over said alternate physical path].

The following new claims have been entered.

146. (New) The method of claim 1, wherein said restoring said virtual path to said second port further comprises:

initiating a port switch request for said second node,
provisioning said virtual path to said second port, and
updating provisioning information in a node database.

147. (New) The method of claim 1, wherein said restoring said virtual path to said second port is completed in less than 2 seconds.

148. (New) The method of claim 1, wherein said restoring said virtual path to said second port is completed in less than 250 milliseconds.

149. (New) The method of claim 1, wherein said restoring said virtual path to said second port is completed in less than 50 milliseconds.

150. (New) The method of claim 146, further comprising:
in response to a determination that no alternate port is available within said link,
restoring said virtual path to an alternate physical path, wherein said restoring
said virtual path to said alternate physical path comprises,
broadcasting a plurality of resource request packets to a plurality of nodes in
said optical network;
identifying a plurality of nodes with resources wherein said nodes with
resources are ones of said nodes having a resource necessary to support
said virtual path;
determining an alternate physical path, said alternate physical path comprising
ones of said nodes with resources;
configuring said alternate physical path by establishing a communication
connection between said ones of said nodes with resources; and
provisioning said virtual path over said alternate physical path.

151. (New) The method of claim 146, further comprising:
in response to a determination that no alternate port is available within said link,
changing a state of said virtual path to restoring,
identifying a plurality of adjacent nodes adjacent to said first node with
required bandwidth for said virtual path,
forwarding a path restoration request to said plurality of adjacent nodes, and
waiting for a response to said path restoration request for a first predetermined
time interval.

152. (New) The method of claim 151, further comprising:
if said response to said path restoration request is not received within said first
predetermined time interval,
repeating said identifying a plurality of adjacent nodes, said forwarding a path
restoration request to said plurality of adjacent nodes, and said waiting
for a response to said path restoration request, for a second
predetermined time interval.

153. (New) The method of claim 152, further comprising:
if said response to said path restoration request is not received within said second
predetermined time interval,
generating a network alarm.

154. (New) The method of claim 153, wherein said first and said second
predetermined time intervals are defined during provisioning of said virtual path.

155. (New) The method of claim 153, wherein said first and said second
predetermined time intervals are dynamically calculated by said optical network based on a
network traffic condition.

156. (New) A machine-readable medium having a plurality of instructions
executable by a machine embodied therein, wherein said plurality of instructions, when
executed, cause said machine to perform a method for restoring a virtual path in an optical
network, the method comprising:

detecting a port failure of a first port within a link between a first node and a second
node of said virtual path;
in response to a determination that at least one alternate port is available within said
link, restoring said virtual path to a second port of said at least one alternate
port using said first node, wherein said restoring said virtual path to said
second port comprises,
transferring a restoration message packet between said first node and said
second node; and
identifying said second port within said link in response to said transferring

157. (New) The machine-readable medium of claim 156, wherein said restoring said virtual path to said second port further comprises:

initiating a port switch request for said second node,
provisioning said virtual path to said second port, and
updating provisioning information in a node database.

158. (New) The machine-readable medium of claim 156, wherein said restoring said virtual path to said second port is completed in less than 2 seconds.

159. (New) The machine-readable medium of claim 156, wherein said restoring said virtual path to said second port is completed in less than 250 milliseconds.

160. (New) The machine-readable medium of claim 156, wherein said restoring said virtual path to said second port is completed in less than 50 milliseconds.

161. (New) The machine-readable medium of claim 157, said method further comprising:

in response to a determination that no alternate port is available within said link,
restoring said virtual path to an alternate physical path, wherein said restoring
said virtual path to said alternate physical path comprises,
broadcasting a plurality of resource request packets to a plurality of nodes in
said optical network;
identifying a plurality of nodes with resources wherein said nodes with
resources are ones of said nodes having a resource necessary to support
said virtual path;
determining an alternate physical path, said alternate physical path comprising
ones of said nodes with resources;
configuring said alternate physical path by establishing a communication
connection between said ones of said nodes with resources; and
provisioning said virtual path over said alternate physical path.

162. (New) The machine-readable medium of claim 157, said method further comprising:

in response to a determination that no alternate port is available within said link,
changing a state of said virtual path to restoring,
identifying a plurality of adjacent nodes adjacent to said first node with
required bandwidth for said virtual path,
forwarding a path restoration request to said plurality of adjacent nodes, and
waiting for a response to said path restoration request for a first predetermined
time interval.

163. (New) The machine-readable medium of claim 162, said method further comprising:

if said response to said path restoration request is not received within said first
predetermined time interval,
repeating said identifying a plurality of adjacent nodes, said forwarding a path
restoration request to said plurality of adjacent nodes, and said waiting
for a response to said path restoration request, for a second
predetermined time interval.

164. (New) The machine-readable medium of claim 163, said method further comprising:

if said response to said path restoration request is not received within said second
predetermined time interval,
generating a network alarm.

165. (New) The machine-readable medium of claim 164, wherein said first and said
second predetermined time intervals are defined during provisioning of said virtual path.

166. (New) The machine-readable medium of claim 164, wherein said first and said
second predetermined time intervals are dynamically calculated by said optical network based
on a network traffic condition.

167. (New) A system comprising:

means for detecting a port failure of a first port within a link between a first node and a second node of a virtual path within an optical network;
in response to a determination that at least one alternate port is available within said link, means for restoring said virtual path to a second port of said at least one alternate port using said first node, wherein said means for restoring said virtual path to said second port comprises,
means for transferring a restoration message packet between said first node and said second node; and
means for identifying said second port within said link in response to said transferring.